

REMARKS

Claims 1, 23, 25, 28 and 31-50 have been rejected as reciting subject matter anticipated by the disclosure in the Gao patent. In particular, the Examiner bases this rejection upon the disclosure relative to Figure 2 depicting pipe sections 110 and 112. In column 4, lines 5 and 6, the angle symbol alpha of the diffuser cone and the angle symbol beta of the reducer cone are illustrated in Figure 2A. Further in column 4, line 23, angle alpha is set forth as being equal to angle beta. Thus, the slope or cone angle of sections 110 and 112, relied upon by the Examiner, are equal. Such angular equality is also shown in each of the relevant figures in the Gao patent.

Claims 1 clearly recites “the upstream and downstream pipe sections in each pair defining different relatively gradual or relatively rapid changes in cross-sectional area” (emphasis added). From this language in claim 1 it is clearly evident that the claimed slope or cone angle of the upstream and downstream pipe sections of a pair of pipe sections are recited as not being the same. Thus, the subject matter recited in claim 1 is not the same as taught in the Gao patent and claim 1 cannot be considered as anticipated by the teachings of the equal slope or cone angles of the Gao diffuser cone and reducer cone.

It may also be noted that the nub or gist of the present invention permits the tuning (cone angle) of one pipe section to break up ropes of entrained material and the tuning (cone angle) of the other pipe section to provide consistent mixing. Such teachings are totally absent from the Gao patent.

It is therefore abundantly clear that claim 1 cannot be considered as reciting subject matter that is or could be anticipated by any disclosure contained in the Gao patent. Allowance of claim 1 is respectfully requested.

Independent claims 31 and 32 have been amended to be consistent with claim 1. As the upstream and downstream sections of each pair are recited as defining different relative gradual or rapid changes in cross sectional area (different slope or cone angles), each of claims 31 and 32 recites subject matter different from that disclosed in the Gao patent. Allowance of claims 31 and 32 is respectfully requested.

Claims 26 and 27 have been rejected as reciting subject matter obvious over certain teachings contained in the Gao patent. In particular, the Examiner gives no credence to the recitation of relative dimensions. Claim 26 depends from claim 1. For reasons set forth above, the Gao patent does not anticipate the subject matter recited in claim 1. Moreover, claim 1 recites subject matter contrary to the Gao patent with respect to the cone angles or slopes. As claim 1 is allowable and as claim 26 depends from claim 1, claim 26 is also allowable. As claim 27 has been cancelled, it need not be discussed.

Claims 24, 29 and 30 have been rejected as reciting subject matter obvious over certain teachings contained in the Gao patent. The Examiner speculates that the use of the Greek letters alpha and beta to identify cone angles suggests that the respective cone angles are different.

However, such speculation is insufficient to support a rejection based upon obviousness. Furthermore, as set forth in column 4, line 23 of the Gao patent it is clearly established that the angles represented by alpha and beta are equal. This clearly contravenes the speculation/assumption made by the Examiner. Hence, as the obviousness rejection is predicated upon such speculation/assumption, it must fail. Moreover, as claims 24, 29 and 30 depend from claim 1, and as claim 1 is allowable, these claims must also be allowed.

In view of the subject matter recited in claim 1, the amendments to independent claims 31 and 32 to render them consistent with claim 1, the cancellation of claims 25, 27 and 28 and the amendments to the claims to more particularly point out and distinctly claim the invention and the above-noted failure of the Gao patent to teach the nub of the present invention, it is believed that the application is in condition for allowance, which allowance is respectfully requested.

Respectfully submitted,

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